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\*Teacher Certification: Teacher Education: \*Teacher

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\*Alaska: \*Firefighting Instructors

#### ABSTRACT

Designed for local Alaskan fire departments, this pamphlet provides the criteria and qualifications for certificates of firefighter instructors (basic, advanced, master), a list of approved subject categories for each level of certification, sample certification applications, a list of resource publications, and a training course outline (basic and advanced) covering twenty-nine subject areas. The subject areas are the following: orientation, behavior of fire (science), extinguishers and extinguishing agents, small tools and equipment, communications, ropes and knots, breathing equipment, ladders, hoses, mathematics, water supply, fire streams, fire alarm systems, forcible entry, ventilation, rescue, salvage and overhaul, fire prevention and inspection practices, personal safety and hazards, apparatus familiarization, first aid, arson evidence, fire man's law, fire suppression, prefire planning, special fire problems, aircraft fire protection and rescue, fire service records and reports, and specialized equipment and techniques. (JH)

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# State of Alaska Fire Service Training Instructor Certification Standards

August 1977

#### PREFACE

The fundamental purpose of the State Fire Service Training Program is to provide the means whereby fire service personnel in all established ranks may be trained, tested, and eventually certified as having met nationally recognized minimum performance standards.

The ultimate goal, of course, is to improve the level of service provided to the citizens of Alaska by developing fire service personnel to their maximum performance potential. In this, no distinction is made between paid professional and volunteer fire fighters.

The initial step in the program has been to develop a system whereby competent fire instructors can be identified, tested and certified by the State. Once this is accomplished, the system will extend to the training, testing and certification of firefighters at all proficiency levels.

The intent of this pamphlet is to provide local fire departments with the criteria for certification of instructors, a list of approved subject categories for basic and advanced firefighter certification, and a Study Reference Guide, covering thirty subject areas, from which questions for State proficiency examinations will be drawn. Unless otherwise indicated in the Study Reference Guide, all references will be based on the training publications of the International Fire Service Training Association as published by Oklahoma State University. For this reason, fire departments are urged to keep a current set of these publications in their station libraries.

Fire Service instructors applying for State Certification must meet all criteria for the various certification levels. Sample applications are included in this pamphlet for information purposes. Additional copies may be obtained from the Fire Service Training Office in Juneau. Individual applications must be submitted for each instructor requesting certification. All required background information must be included. The Fire Service Training Office will not solicit or research missing data and incomplete applications will be rejected.

Proficiency examinations will be conducted in most communities twice a year. Dates and locations will be announced by the Supervisor of Fire Service Training no later than thirty days prior to the time any examination is scheduled. In the event only one or two applicants are to be tested, such examinations may be conducted through a local school or community college on prior arrangement with the Fire Service Training Office. Every effort will be made to schedule examinations at times most convenient to local fire departments.

Since the mechanism for field testing physical skills of certification candidates is not presently available, fire chiefs are urged to determine that each candidate for instructor certification does, in fact, have the necessary skills before signing Section 3 of the application form. In certain instances, the Supervisor of Fire Service Training, on request or at his own discretion, may require candidates to demonstrate physical skills before a qualified observer.

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Participation in this program by local fire departments is, of course, on a voluntary basis. If it is to be successful as a means of improving the quality of fire protection in Alaska, it must have the support of the fire service. We urge your fire department to indicate its support by participating to the fullest extent.

William A. Hagevig, Supervisor Fire Service Training Program

#### BASIC INSTRUCTOR CERTIFICATION

Validation Period: Five years from date of initial testing.\*

Criteria: Basic Instructor Certification may be granted to those individuals who:

- 1. have completed 3 years of active fire department service above the probationary level.
- 2. Successfully compete on the statewide Basic Instructor Certification Examination.
- 3. have satisfactorily completed a basic level fire service instructor course in methods and techniques of instruction. Subject course to be not less than 40 hours duration, and to include practice teaching and evaluation by two qualified observers.

#### Qualifications:

- 1. Any applicant must have 3 years experience (criteria #1) or complete 3 years experience within 3 months of a scheduled testing in order to take the Basic Instructor Certification examination.
- 2. Examination applicants do no need to have MCI course (criteria #3) to be tested. However, no certification will be granted until an approved MCI course is completed. All applicants have 3 years from initial testing to meet this criteria.
- \*3. All applicants will be tested on the 20 Basic Subject Categories. The applicant will be certified as a Basic Instructor in those topics receiving a 70% or better score. The applicant will have 3 years to successfully complete all 20 topics. Any retesting to pick up incomplete topics will be on only those topics not yet completed. If the applicant fails to complete all 20 topics within 3 years, he must begin testing on all 20 topics again as a "new" applicant. If the applicant completes all 20 topics within 3 years and meets all other criteria, the Basic Instructor Certification will be valid for 5 years from initial testing.

NOTE: Certified Basic Instructors are authorized to teach and to validate training records on only those topics successfully completed. This instruction, when in cooperation with the Fire Service Training Program, must adhere to State policy and reflect materials contained in the State Fire Training Manuals, i.e. IFSTA Training Manuals.

- Any certification may be revoked by the Supervisor of Fire Service Training for any of the following reasons:
  - 1. Expiration of validation.
    - 2. Failure to maintain qualification.
  - 2. Failure to ma:
    3. Incompetence.
    - 4. When the Supervisor of Fire Service Training determines that just and reasonable cause for revocation exists.



#### SUBJECT CATEGORIES: BASIC CERTIFIED INSTRUCTOR LEVEL

- ORIENTATION TO THE FIRE SERVICE
- 2. BFHAVIOR OF FIRE (SCIENCE)
- 3. PORTABLE EXTINGUISHERS AND EXTINGUISHING AGENTS
- 4. SMALL TOOLS AND PQUIPMENT
- FIRE DEPA "TMENT COMMUNICATIONS
- 6. ROFES AND KNOTS
- 7. BREATHING APPARATUS AND RELATED EQUIPMENT
- 8. GROUND LADDERS
- 9. HOSE PRACTICES
- 10. FIRE STREAMS
- 11. WATER SUPPLY
- 12. INSTALLED FIRE DETECTION AND PROTECTION SYSTEMS BASIC
- 13. FORCIBLE ENTRY
- 14. VENTILATION
- 15. EXTRICATION AND RESCUE
- 16. SALVAGE AND OVERHAUL
- 17. INTRODUCTION TO FIRE PREVENTION AND INSPECTION
- 18. PERSONNEL SAFETY AND HAZARDS
- 19. FIRE APPARATUS FAMILIARIZATION
- 20. FIRE SUPPRESSION TECHNIQUES

#### ADVANCED INSTRUCTOR CERTIFICATION

Validation Period: Five years from date of initial testing.\*

<u>Criteria</u>: Advanced Instructor Certification may be granted to those individuals who:

- 1. have completed 4 years of active fire department service above the probationary levels.
- 2. have a valid certificate for all 20 topics of Basic Instructor Certification.
- have completed a second 40 hour course in methods and techniques, practice teaching, and evaluation by two qualified observers.

#### Qualifications:

- 1. Any applicant must have 4 years experience (criteria #1) or complete 4 years within 3 months of a scheduled testing in order to take the Advanced Instructor Certification examination.
- 2. Examination applicants do not need to have the second MOI course (criteria #3) to be tested. However, no certification will be granted until a second approved MOI course is completed. All applicants have 3 years from initial testing to meet this criteria.
- 3. All Basic Instructors must wait one year from completion of the 20 Basic Instructor Certificate before making application to the Advanced Instructor category.
- \*4. Applicants will be tested on the 10 Advanced Subject Categories. An applicant will be certified as an Advanced Instructor in those topics receiving a 70% or better score. The applicant will have 3 years to successfully complete all 10 topics. Any retesting to pick up incomplete topics will be on only those topics not yet completed. If the applicant fails to complete all 10 topics within 3 years, he must begin the Basic Instructor testing again as a "new applicant, since his Basic Certificate is likely to have expired by that time. If the applicant completes the 10 topics within 3 years and meets all other criteria, the Advanced Instructor Certificate will be valid for five years from initial testing.

NOTE: Advanced Certified Instructors are authorized to teach all subjects at the Advanced Certified Firefighter level, and to validate training records for this level of instruction.

Certificate may be revoked for any of the following reasons:

- 1. Expiration of validation.
- 2. Failure to maintain qualification.
- 3. Incompetence
- 4. When the Supervisor of Fire Service Training determines that just and reasonable cause for revocation exists.



### SUBJECT CATEGORIES: ADVANCED CERTIFIED INSTRUCTOR LEVEL

- 21. MATHEMATICS FOR THE FIRE SERVICE
- 22. APPARATUS DRIVING AND OPERATION
- 23. FIREFIGHTER'S LAW
- 24. FIRE SUPPRESSION TACTICS AND STRATEGY
- 25's PRE-FIRE PLANNING
- 26. SPECIAL FIRE PROBLEMS
- 27. AIRCRAFT RESCUE AND FIREFIGHTING
- 28. SPECIALIZED EQUIPMENT AND TECHNIQUES
- 29: ARSON EVIDENCE
- 30. FIRE SERVICE RECORDS AND REPORTS

#### MASTER INSERUCTOR CERTIFICATION

Validation Period: Five years from date of issue.

#### Criteria:

Master Instructor Certification may be granted to those individuals who:

- Have completed five (5) years of active fire department services above the probationary level.
- 2. Qualify as an Advanced Certified Instructor and hold certification at this level.
- (a) Must have been a fire department officer for at least three years; or
  - (b) Must have served a minimum of three years in the capacity of fire service instructor or training officer in a fire department with an organized training division; or
  - (c) Must have served in the capacity of a fire service instructor or training officer as an authorized representative of a State agency, educational institution or political subdivision devoting full time to fire service training and related responsibilities.
- 4. Must have assigned responsibilities as an instructor or training officer, or have held either position within 24 months prior to application.
- 5. Must possess an Associate Degree or higher in Fire Science or re- lated field from an accredited institution recognized by the State of Alaska.\*

NOTE: Master Certified Instructors are authorized to teach all certification levels and subject areas of specialization in the fire service career hierarchy for which they have earned qualification.

\* At the discretion of the Supervisor of Fire Service Training, additional experience as a fire department officer may be substituted for educational requirements on a year for year basis.

### APPLICATION FOR INSTRUCTOR CERTIFICATION

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Include highest grade completed in formal education, special topics courses, workshops and seminars. Be sure to include any instructor training.

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### SPECIAL INSTRUCTOR CERTIFICATE

Individuals having special skills, knowledge or abilities, but not qualifying under one of the other categories, may be certified to teach designated subjects relating to their special field of knowledge. Special certificates will be issued at the discretion of the Supervisor of Fire Service Training. Prior to certification the applicant must have his application and supporting papers on file with the office of the Supervisor of Fire Service Training. No education or Fire Service experience limitations will be applied to the special certification.

#### General:

- 1. Certificates will be issued, initially, for a period of one year.
- 2. In order to obtain renewal, the instructor must reapply at the expiration of the period of time for which the certificate was issued.
- 3. Termination of Certificate: Certification of an instructor shall be terminated for any of the following reasons:
  - Expiration of the period of time for which certification was made.
  - b. When the instructor fails to meet the requirements of the type of certification issued to him:
  - c. When the Supervisor of Fire Service Training determines, that "just and reasonable cause exists for withdrawing the certification.
- Instructors holding special certificates will be required to comply with conditions stipulated by the State Supervisor of Fire Service Training in conducting training, controlling examinations, maintaining records and submitting reports.

#### APPLICATION FOR SPECIAL INSTRUCTOR CERTIFICATION

Full Name (Print or Type) Rank (if applicable) Address (Home) Address (Work)\_\_\_ Telephone Number: Home ♥ Work\_ Fire Service Affiliation\_ Please Check One: itial Application Renewa 1 Basis for Certification Application Signature of Applicant ) Approved wisapproved (see below) State Supervisor, Fire Service Training Date



### RESOURCE PUBLICATIONS

IFSTA* MANNUAL	<u>TITLE</u> <u>E</u>	DITION	DATE
101	Forcible Entry, Rope & Ex- tinguishers	5th '	1972
102	Ground Ladder Practices	7th	1973
103	Fire Hose Practices	.6th	1974
104	Salvage & Overhaul Practices	5th	1969
105	Fire Stream Practices	5th	1972
106	Fire Apparatus Practices	5th	1970
107	Fire Ventilation Práctices	5th	1970
108	Fire Rescue & Breathing	4th	1969
į.	Apparatus		
109	First Aid Practices	5th	1977
110	Fire Prevention & Inspection	4th	1974
200	Essentials of Firefighting	lst-	1977
201	Fire Service Practices for	5th	:1971
	Volunteer Fire Departments		*****
202	Fire Service Orientation &	lst	1976
	Indoctrination	,	
203	Fire Service Training Programs	2nd	1971
205	Water Supply &	2nd	1,971
206	Aircraft Fire Protection &	lst	1970
	Rescue		,
207	Ground Cover Firefighting	lst	1973
	Practices		,
208		lst 🔭	1975
- P	Service		
209	Firefighters Occupational Safety	lst	1977
301	The Fire Department Officer	2nd	1967
302	Fire Department Facilities,	2nd	1970
	Planning and Procedures		
303	Fire Service Instructor	3rd	1973
) i	<b>3</b>	*	
401	Principles of Mathematics	3rd	1966
402	Principles of Science	3rd	1967
403	Leadership in the Fire Service	lst	1967 '

NOTE: Above listed publications may be purchased from:

International Fire Service Training Association Fire Protection Publications Oklahoma State University Stillwater, Oklahoma 74074



#### ADDITIONAL TEXT REFERENCES

The following texts are referred to in the Study Reference Guide in addition to the publications of the International Fire Service Training Association. All should be included in Station libraries.

N.F.P.A.	Various publications of the National Fire Protection Association
Bahme	 "Fireman's Law Book", Charles W. Bahme, A.B., J.D.
Clark	"Firefighting Principles and Practices William E. Clark
Fried F.S.T.P.	 "Fireground Tactics", Emanuel Fried  Various publications of the State of Alaska, Fire Service, Training Program

#### ALASKA DEPARTMENT OF EDUCATION Fire Service Training Program

### STUDY REFERENCE GUIDE

NOTE:	NOTE: Unless otherwide stated, all study references apply to I.F.S.T.A. Manuals.		references apply		ADVANCED CTOR
	COURSE OUTLINE	o'		STUDY RE Book No.	FERENCES Page
I. OR	TENTATION		•		2.5 kg
1.	Outline of training program		, 4,	203	132
2.	Duties and responsibilities	/e		203	20 0
3.	Testing procedures		- W	203	88
4.	Familiarization with training facilities	-		203	60
5.	Responsibilities of the training agency		•	203	7
6.	Study Habits				
7.	Departmental history, tradition, development, organization and structure	301 301	9-12 20,50	•	
8.	Personnel policies			302	10
9.	Operation of the fire department	1		•	<b>.</b>
10.	Duties and responsibilities of all personnel in the fire department		<b>*</b>	ar .	- 10 mg
<b>11.</b>	General rules and procedures		*		
12.	Employee activities and services		a		- •
13.		•			
<b>14.</b>	Self improvement and promotion opportunities	203	17-19 209-11		
		17			

### CERTIFIED FIRE FIGHTER CERTIFIED INSTRUCTOR TRAINING COURSE OUTLINE

CONTINUED, PAGE 2	CERTIFII INSTRU		CERTIFIED ADVANCED		
COURSE OUTLINE	STUDY REI		STUDY REFE Book No.	RENCES Page	
. ORIENTATION, CONT'D.	2	-			
15. Personal conduct/appearance			*=		
16. Public relations	106	145-6			
17. The effects of PR on fire department budget and recruitment				4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
18. Fire department community image					
19. Methods of enhancing PR				**************************************	
20. Public courtesy, service & coopera- tion		D	*		
21. Participation in community projects, i.e., children's programs and charitable causes	i,				
22. Facilitles available through the department	4				
23. Community facilities and obligations	•	1.	M:	•	
24. Higher education in the fire service	.:03	209	y?		
25. Fire department terminology	202	•			
26. Response to alarms		A		g g	
27. Fire protection clothing	107 108	104 59-60			
28. Law as it applies to the fire service (rights, duties and liabilities)			203	15 <b>i</b>	
29. Familiarization with all reference literature and material			203	132-176	

#### CERTIFIED FIRE FIGHTER CERTIFIED INSTRUCTOR TRAINING COURSE OUTLINE

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COURSE OUTLINE	URSE OUTLINE STUDY REFERENCES Book No. Page		STUDY REFERENCES Book No. Page		
IL. FIRE BEHAVIOR - SCIENCE		2			
1. Principles of combustion,	107	11-24 11-16			
2. Classes of fire and characteristics of combustibles	107	25-29			
3. Backdrafts	107	32-33	107 402	32 88	
4. Characteristics and hazards of explosives		,	206 110	93-108 47-64	
5. Handling, storing, transporting, classifying, categorizing and identifying explosives			206 110	95 <b>-1</b> 08	
6. Dot "Hi" System		***************************************	110	55-61	
7. Chemtrec			a .		
8. Chem-card					
9. Placarding storage areas and transportation vehicles			108	11-24,47	
10. Fire protection, fire prevention and firefighting of hazardous materials and chemicals			110	57	
11. Applicable agents and techniques		/	206 110	98,107 c	
12. Principles of fire control	107 201	73 171–186			
. 13. The fire triangle and tetrahedron concepts	107 110	11-15 36-37	, a	•	
14. Methods of heat transfer	107	33-41	105 402	10-14 90-94	
15. Stages and phases of burning	107 402	25-30 86-88	44		

## CERTIFIED FIRE FIGHTER CERTIFIED INSTRUCTOR TRAINING COURSE OUTLINE

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II. FIRE BEHAVIOR - SCIENCE, CONTINUED				
16. The law of heat flow			197 402	33 90-91
17. The law of specific hear	e e		107 402	37 93
18. The law of late it heat of vapor- ization			107 402	39 94
19. Flammable liquids	107	17		
A) Flash point	206	28-30	107 402	17 82
B) Burning point			107	18
C) Ignition temperature			402 107	81 18
D) Vapor density	206	30	402 107	83 21 °
E) Explosive limits	206	28	402 107	82 20
F) Classification	107	19	402 206	83 🏞 28
G' Boiling point	402	, 96	ti .	
H) Specific gravity				
I) Transporting	110	. 49-55	•	
J) Identifying	•		206	28
K) Storing	.,	*	110	49-60

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COURSE OUTLINE		STUDY REFERENCES Book No. Page		RENCES Page	
11. FIRE BEHAVIOR - SCIENCE, CONTINUED					
L) Handling equipment			110 -	137-141	
20. Compressed gases	a .			i.	
A)_Appliances and piping	ç <u>t.</u>		110 -	57	
B) System installation					
C) Storage			402	61-62	
D) Handling	-	*	110	49-55	
E) Transportation		4	110	52	
F) Manufacture			110	52 <b>-62</b>	
G) Safety Devices					
H) Identification	2		402	71	
21. Boyle's Law	1		402	51	
22. Charle's Law			402	51	
23. Atmospheric pressure			402	<b>52</b>	
24. The principles of a vacum  25. The syphon		nggangan ganda sa gang ana sa Marin	402	52	
25. The syphon	21		. 402	52	

### CERTIFIED FIRE FIGHTER CERTIFIED INSTRUCTOR TRAINING COURSE OUTLINE

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. FIRE BEHAVIOR - SCIENCE, CONTINUED	•	•		
26. The jet	•		402	56
27. Measurement of gas pressure			402	57
28. Reaction of confined gases to heat and cold	*		402	90-97
29. Pneumatic power	P.		402	59
30. Vaporization and Condensation			402	60
31. Hazardous materials	206	93	108 110	16 5 <b>7-61</b>
32. Hazardous chemicals		,	109	41-46
33. Characteristics of matter			402	3.
34. Chemical and physical properties	. 0	•	402	3, 4, 82
35. Indestructibility of matter	:		402	<i>े</i> 4
36. Measurements of matter & motion			402	5
37. Dimensions, mass, weight, time, density, specific gravity		,	402	5-7
38. The laws of motion, inertia, momentum, reaction, gravity, equilibrium, speed & pressure			402	13-14
39. Work, energy, and power	ч		402	21
40. Principles and classes of levers, what is, planes, pulleys, screws, and wedges		. :	<b>~ 402</b>	22-30

## CERTIFIED FIRE FIGHTER CERTIFIED INSTRUCTOR TRAINING COURSE OUTLINE

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II.	EIRE BEHAVIOR -SCIENCE, CONTINUED						
	51. Spontaneous heating and ignition			402	83		
•	52. Acids - hydrocholoric, citric, sulphuric, acetic, tartaric, other organic acids	2		402	73-74		
	53. Alkalies or bases-sodium hydro- xide, sodium bicarbonate, sodium hydrogen carbonate, potassium						
	hydroxide			402	73-75		
· ·	54. Salts			402	75		
`	55. Chemical equations	. د	. Vv	402	76		
-	56. Molecular forces	-		402	69		
`-	57. Magnets and magnetism			402	99-102		
	58. Electrical structure of matter	•		402	104		
·	59. Direct current	iā		402	105		
	60. Alternating current		<b>7</b>	402	106		
8	61. Transmission & transformation of electricity			402	106		
7	62. Measuring & controlling electrical current			402	107		
	63. Batteries			402	109		
,	64. Static electricity & lightning			402	111		
	65. Conductivity of material and extinguishing agents			105	23		
•	66. Techniques of firefighting fires involving electricity	,		105	22		
u.	EXTINGUISHERS & EXTINGUISHING AGENTS	:			a Tarana a a a a a a a a a		
	1. Extinguisher principles and operation (all types)	101 201	140 43-55	•	•		

### CERTIFIED FIRE FIGHTER CERTIFIED INSTRUCTOR TRAINING COURSE OUTLINE

CONTINUED, PAGE 8	CERTIFIED BASIC INSTRUCTOR ·			CERTIFIED ADVANCED INSTRUCTOR	
COURSE OUTLINE	STUDY REV Book No.	ERENCES Page	STUDY REFERENCES Book No. Page		
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